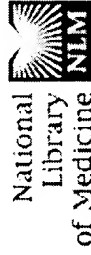




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**nature**

## Myeloid leukaemia inhibitory factor maintains the developmental potential of embryonic stem cells.

Williams RL, Hilton DJ, Pease S, Willson TA, Stewart CL, Gearing DP, Wagner EF, Metcalf D, Nicola NA, Gough NM.

European Molecular Biology Laboratory, Heidelberg, FRG.

Embryonic stem (ES) cells, the totipotent outgrowths of blastocysts, can be cultured and manipulated in vitro and then returned to the embryonic environment where they develop normally and can contribute to all cell lineages. Maintenance of the stem-cell phenotype in vitro requires the presence of a feeder layer of fibroblasts or of a soluble factor, differentiation inhibitory activity (DIA) produced by a number of sources; in the absence of DIA the ES cells differentiate into a wide variety of cell types. We recently noted several similarities between partially purified DIA and a haemopoietic regulator, myeloid leukaemia inhibitory factor (LIF), a molecule which induces differentiation in M1 myeloid leukaemic cells and which we have recently purified, cloned and characterized. We demonstrate here that purified, recombinant LIF can substitute for DIA in the maintenance of totipotent ES cell lines that retain the potential to form chimaeric mice.

PMID: 3143916 [PubMed - indexed for MEDLINE]

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